

Work Order ID 85140

85140

Page 1

June-04-12 1:26:23 PM

Item ID: D350-636-011

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube LH

Start Date: 04/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/04

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2750

F

D3492

C

100

0.00

100

DOCUMENT CONTROL

IDC

0.00

Memo

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 006

DAS
16
8-23
12/07/11

JB

MLJ 12/07/11

B85140LH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Reject
Qty

Reject
Number

Insp.
Stamp

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

BE 12/06/25

BE 12/06/28

BE 12/06/28

BE 12/06/25

BE 12/06/28

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: *M122630 BE 12/06/25*

12-Grind welds flush as per Dwg D2750

BE 12/06/25

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

QC

Memo

0.00

Quality Control

8/12/06/25

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

8/12/06/25

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Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC7-Inspect Chemical Conversion Coat	0.00							
150									
QC	Memo	0.00							
Quality Control									

141 S (P) 12/07/03

(V) SAD H-07-03

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Skidtubes

0.00

Skidtubes

Memo1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291

batch: 121409exp. date: 13-4-128- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)

A/R Aluminum Rod

batch: M12230

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

SAD 12-07-03

DC 12/07/03

78E 12/07/04

DP 12-7-9

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12-Deburr holes

170 QC10- Inspect visual per QSI004- ground welds 0.00

170

QC

Memo

Quality Control

180 QC5- Inspect part completeness to step on W/O 0.00

180

QC

Memo

Quality Control

Handwritten: > DP 12-7-9

Handwritten: S.26/110

Handwritten: S.26/110

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Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

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SPC (Y/N):

Date:

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--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190 Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 76 12-7-10

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

10:30
320 °F
11:00

IXP M.F. 12/07/10

210

QC3- Inspect Part Finish

0.00

210

QC

Quality Control

Memo

Inspect for foreign object per QSI 024

0.00

12H 12/07/10

M121481

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	QC:	Date:	SPC (Y/N):	Date:	Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00

220

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1- Install inserts as per Dwg D2750

1 in 4 all u/o 7/10

230

0.00

230

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: *N/A*

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: *1111136*

EXP DATE: *11/1/03*

4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube

A/R 55-o-ring lube batch: *1110348*

5-Coat all exposed fasteners with "LPS Procyon" batch: *1114591*

1 in 4 all u/o 7/10

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SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240 QC5- Inspect part completeness to step on W/O

0.00

240

QC

Memo

0.00

Quality Control

5.21/11

250 Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

12/07/11 JB



260 QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

DAS 16 8-53 12/07/12

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	QC:	Date:	SPC (Y/N):	Date:	Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	Package as per PPP D350-636-011								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

Handwritten signature/initials

MLJ 12/07/13

MLJ 12/07/13

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Picklist Print

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Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:I 02.09.25 Rearranged procedure steps KJ
 IPP Rev:J 06-03-23 As per Rev D JLM
 IPP Rev:K 06-07.13 As per dsi9343 EC
 IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verf:EC
 IPP Rev:M 08-04-22 update steps 4, 13 DD verified by:EC
 IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec
 IPP Rev:O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
 DD verf:EC IPP Rev:P 10.06.22 revise
 seq110 DD verf:EC IPP Rev:Q 10.10.01 as per IIN revH
 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3492-1		Manufactured	No			230	Each	257.0000	8	8			
D3492-1 Plug													
								**	21 4/02/10				

Location	Loc Qty	Loc Code
FP002	242	
69531	8	
74444	2	
76235	4	
83259	228	
FP-A	15	
83098	15	

D3492-3		Manufactured	No			230	Each	167.0000	8	8			
D3492-3 Plug													
								**	21 12/07/10				

Location	Loc Qty	Loc Code
FP-A	167	
81967	5	
83099	40	
83529	122	

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85140

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Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

188.0000

8

8

NAS1611-010

O-RING

**

12/07/10

Location

Loc Qty

Loc Code

FP001

188

110915

14

117460

8

118077

1

118612

3

119438

47

121259

2

121415

4

121584

59

121723

50

1122151

x3

x5

NAS1149D0863J

Purchased

No

250

Each

251.0000

2

2

NAS1149D0863.J

WASHER

**

JB

12/07/11

Location

Loc Qty

Loc Code

ST298

251

118078

34

119307

17

120308

100

121556

100

120308

D2744

Manufactured

No

110

Each

35.0000

1

1

D2744

Cap

**

OK 12/06/25

Location

Loc Qty

Loc Code

LG002

35

62715

1

78900

3

83412

31

1

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Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110

Each

29.0000

1

1

D2600-3-BENT

Extrusion Bent

BE 12/06/25

Location

Loc Qty

Loc Code

LG

29

66875

7

73253

1

75021

1

75022

1

75023

1

81330

4

83305

1

83442

13

D2743

Manufactured No

160

Each

296.0000

8

8

D2743

Crossbolt Spacer

BE 12/07/04

Location

Loc Qty

Loc Code

LG

222

81965

55

83262

167

LG001

74

67766

4

68251

3

73403

64

74445

1

79517

2

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2739

Manufactured No

160

Each

13.0000

1

1

D2739

350 I Beam

**

De 12/01/03

Location

B85486

Loc Qty

Loc Code

LG

13

72155

1

81508

1

83447

4

83448

5

83548

2

D3490-3

Manufactured No

160

Each

46.0000

4

4

D3490-3

Cross Bolt Spacer

**

BE 12/07/04

Location

Loc Qty

Loc Code

LG001

46

83313

46

D3490-1

Manufactured No

160

Each

45.0000

4

4

D3490-1

Cross Bolt Spacer

**

BE 12/07/04

Location

Loc Qty

Loc Code

LG

2

81976

2

LG001

43

62450

2

74875

4

77042

3

83269

34

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

220

Each

781.0000

38

38

AI S4-1032-225

Insert

**

yu 12/07/10

Location

Loc Qty

Loc Code

ST281

758

M1122290

y38

108696

146

110768

62

118386

55

118966

68

121269

427

ST282

23

120410

10

120451

13

D3793-3

Manufactured

No

230

Each

28.0000

1

1

D3793-3

Wearshoe

**

yu 12/07/10

Location

Loc Qty

Loc Code

FP001

28

83394

16

83901

12

AN8C35A

Purchased

No

230

Each

68.0000

1

1

AN8C35A

BOLT

**

yu 12/07/10

Location

Loc Qty

Loc Code

FP002

67

115960

1

118286

16

121275

50

ST346

1

114442

0

115188

0

115960

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3793-1
D3793-1
Wearshoe

Manufactured No 230 Each 28.0000 1 1

**

HL 12/07/10

Location	Loc Qty	Loc Code
FP001	28	
82171	2	
83393	13	
83903	13	

D3488-041
D3488-041
Blade Fitting Assembly, LH

Manufactured No 230 Each 9.0000 1 1

**

HL 12/07/10

Location	Loc Qty	Loc Code
FP002	9	1385807
61689	1	
82271	8	

D3794-3
D3794-3
Gasket

Manufactured No 230 Each 23.0000 1 1

**

HL 12/07/10

Location	Loc Qty	Loc Code
FP	21	
83396	21	
FP002	2	
74530	2	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

86.0000

4

4

AN6C44A

BOLT

**

yl 12/07/10

Location

Loc Qty

Loc Code

FG

2

103964

2

ST343

84

121013

11

121167

13

121440

50

121689

10

~~121440~~

xd

MS21083C8

Purchased

No

230

Each

81.0000

1

1

MS21083C8

NUT

**

yl 12/07/10

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

xl

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-25

Manufactured No

230

Each

28.0000

1

1

D3536-25

Gasket

**

yl 12/07/10

Location

Loc Qty

Loc Code

FP

28

83391

12

x1

83900

16

D3631-1

Manufactured No

230

Each

347.0000

8

8

D3631-1

Washer

**

yl 12/07/10

Location

Loc Qty

Loc Code

FG

332

81874

2

83588

330

ST072

15

x8

68062

2

75548

13

D3791-1

Manufactured No

230

Each

17.0000

1

1

D3791-1

Wearplate

**

yl 12/07/10

Location

Loc Qty

Loc Code

FP002

17

62239

2

83392

15

x1

AN960C10L

NAS1149C0332

Purchased

No

230

Each

0.0000

38

38

***AN960C10L ***

washer

M122063

**

(x38) yl 12/07/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Page 9

Work Order ID: 85140

85140

Parent Item: D350-636-011

D350-636-011

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230

Each

122.0000

8

8

D2745

Bushing

**

yl ulozlio

Location

Loc Qty

Loc Code

FP

6

79518

6

FP001

116

69529

1

76142

1

83260

114

AN3C5A

Purchased

No

230

Each

1,302.000

34

34

AN3C5A

Bolt

**

yl ulozlio

Location

Loc Qty

Loc Code

FP001

7

115835

7

ST350

1295

116419

28

117343

13

117764

7

117872

2

119749

23

120423

28

121068

12

121255

500

121444

182

121708

500

x 34

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

230

Each

83.0000

3

3

D3537-1

Wearpad

**

21 12/07/10

Location

Loc Qty

Loc Code

FG

10

383256

x3

79833

10

FP002

73

69817

5

81360

14

81362

19

83254

1

83255

3

84091

31

NAS1149C0832R

Purchased

No

230

Each

257.0000

1

1

NAS1149C0832R

WASHER

**

21 12/07/10

Location

Loc Qty

Loc Code

ST297

257

114915

257

x1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Page 11

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

451.0000

4

4

AN3C6A

BOLT

**

yl 12/07/10

Location

Loc Qty

Loc Code

FP001

1

111982

1

ST351

450

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

3

120693

158

121682

200

yl

NAS1611-013

Purchased

No

230

Each

361.0000

8

8

NAS1611-013

O-RING

**

yl 12/07/10

Location

Loc Qty

Loc Code

FP001

361

116582

5

117291

2

117887

53

119623

36

121584

15

121825

200

yl

121826

50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 12

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-25

Manufactured No

230

Each

34.0000

1

1

D3535-25

Wearshoe

**

21 12/07/10

Location

Loc Qty

Loc Code

FP001

34

62233

1

81357

1

82156

2

83387

17

83899

13

D3794-1

Manufactured No

230

Each

26.0000

1

1

D3794-1

Gasket

**

21 12/07/10

Location

Loc Qty

Loc Code

FP

6

82167

6

FP002

20

83395

20

MS21043-6

Purchased No

230

Each

618.0000

4

4

MS21043-6

NUT

**

21 12/07/10

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

598

117887

2

118384

96

120308

500

June-04-12 1:26:29 PM

Shop Packet Print

Page 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-04-12 1:26:29 PM

Page 13

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

127.0000

2

2

**

D3493-1

Washer

Location

Loc Qty

Loc Code

ST050

127

77573

1

82023

26

83097

100

Purchased

No

250

Each

81.0000

2

2

**

MS21083C8

MS21083C8

NUT

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

Purchased

No

250

Each

57.0000

2

2

**

AN8C21A

AN8C21A

BOLT

Location

Loc Qty

Loc Code

ST343

57

118758

3

121167

4

121275

50

June-04-12 1:26:29 PM

Shop Packet Print

Page 13

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 14

Work Order ID: 85140

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

85140

D350-636-011

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

146.0000

4

4

***NAS1515H3I ***

WASHER

**

yl n/07/10

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

106

118686

3

119438

1

120360

11

121243

2

121556

89

D2741

Manufactured

No

250

Each

20.0000

1

1

D2741

Blade, 350 Skidtube

**

8.3135 JB SP

Location

Loc Qty

Loc Code

ST

-10

ST466

30

71856

1

79516

19

D3532-1

Manufactured

No

250

Each

7.0000

2

2

D3532-1

Spacer

**

8.3319 JB SP 12/07/11

Location

Loc Qty

Loc Code

ST053

7

82041

7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
 - ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 85140 MJS
12106104

RELEASED
6-27-77

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/3 REPLACES D3535-13/35 (ZN C8-1); D3794-1/3 REPLACES D3536-13/35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL), WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 05-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEC 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV	DESCRIPTION	BY	DATE
DESIGN	PO REV	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN		DRAWING NO.	REV. F
CHECKED		D2750	SHEET 1 OF 11
MFG. APPR.		TITLE	SCALE
APPROVED		350 SKIDTUBE ASSEMBLY	NTS
DE APPR.			
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

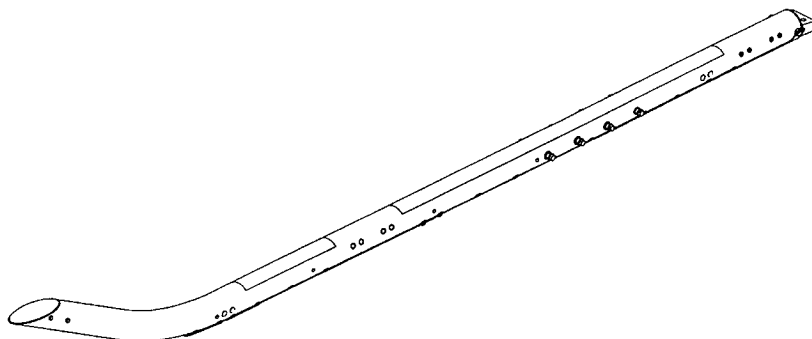
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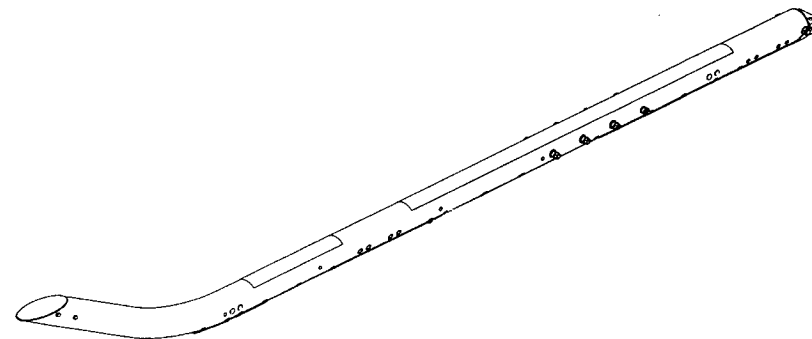
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

85140



D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

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68-09-22/100

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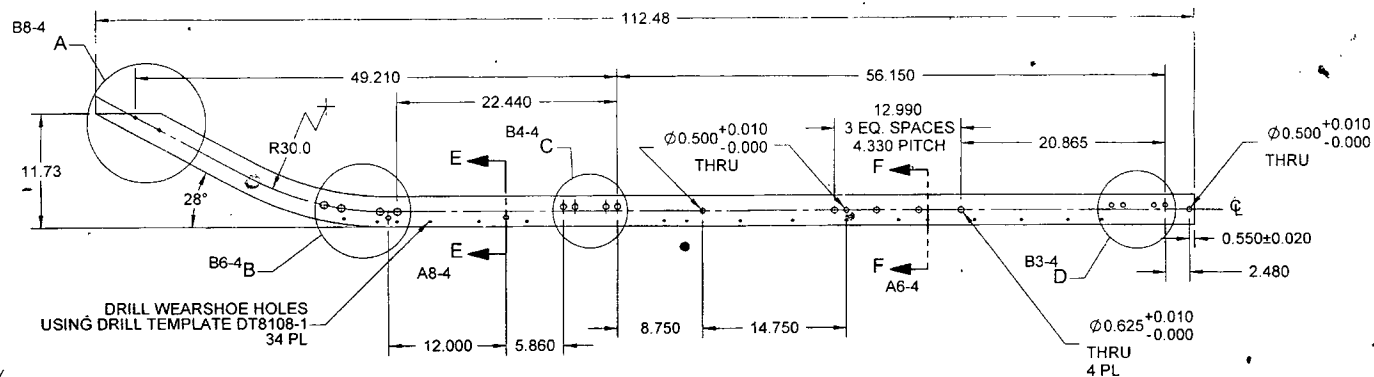
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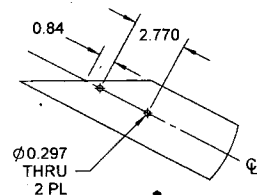
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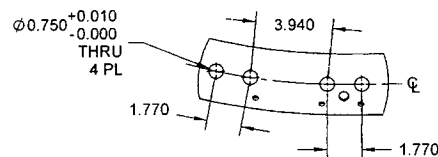
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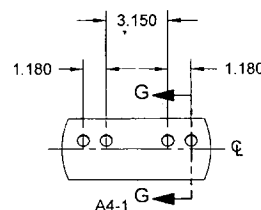
D2750-1 LH SKIDTUBE



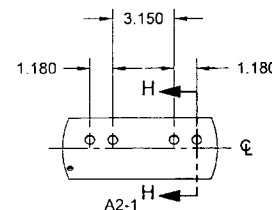
DETAIL A
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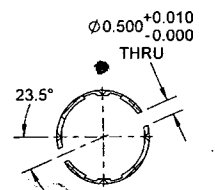
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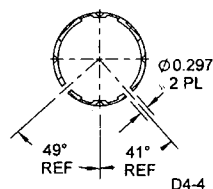
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SCALE 2X



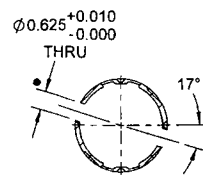
DETAIL D
SCALE 2X



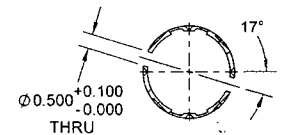
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

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DE APPR.		TITLE 350 SKIDTUBE ASSEMBLY
DATE	08.07.16	SCALE NTS

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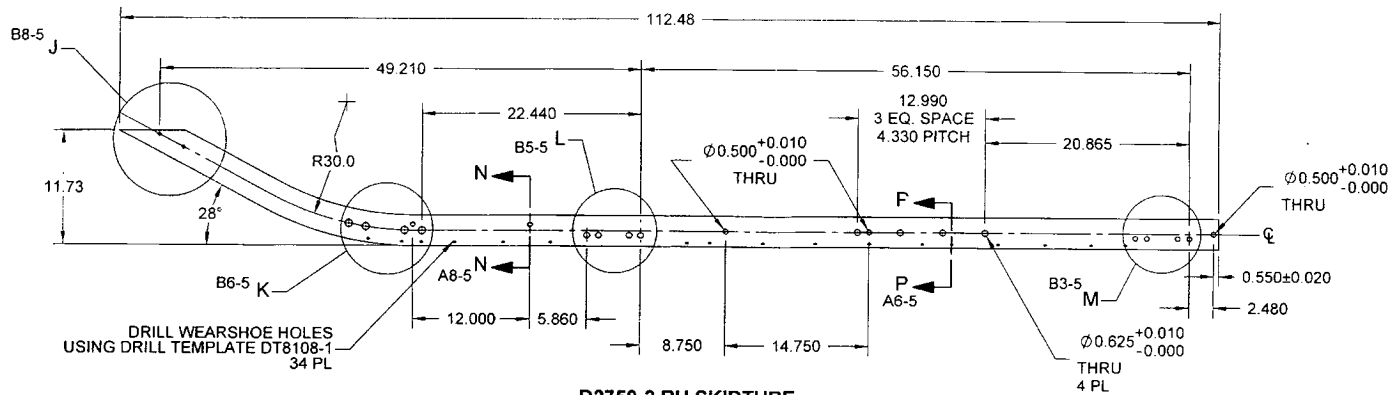
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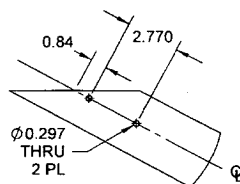
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

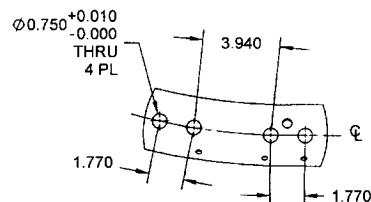
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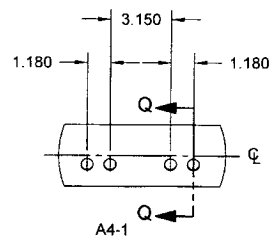
D2750-2 RH SKIDTUBE



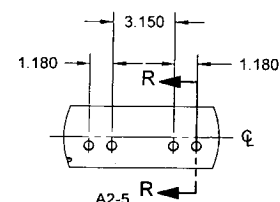
DETAIL J
SCALE 2X
D8-5



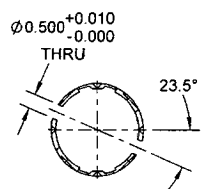
DETAIL K
SCALE 2X
C7-5



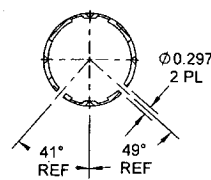
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SCALE 2X
D6-5



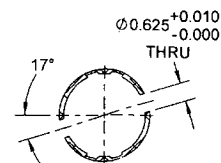
DETAIL M
SCALE 2X
C3-5



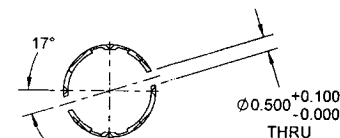
SECTION N-N
SCALE 3X, 2 PL
C6-5



SECTION P-P
SCALE 3X, 17 PL
C4-5



SECTION Q-Q
SCALE 3X, 4 PL
B5-5



SECTION R-R
SCALE 3X, 4 PL
B3-5

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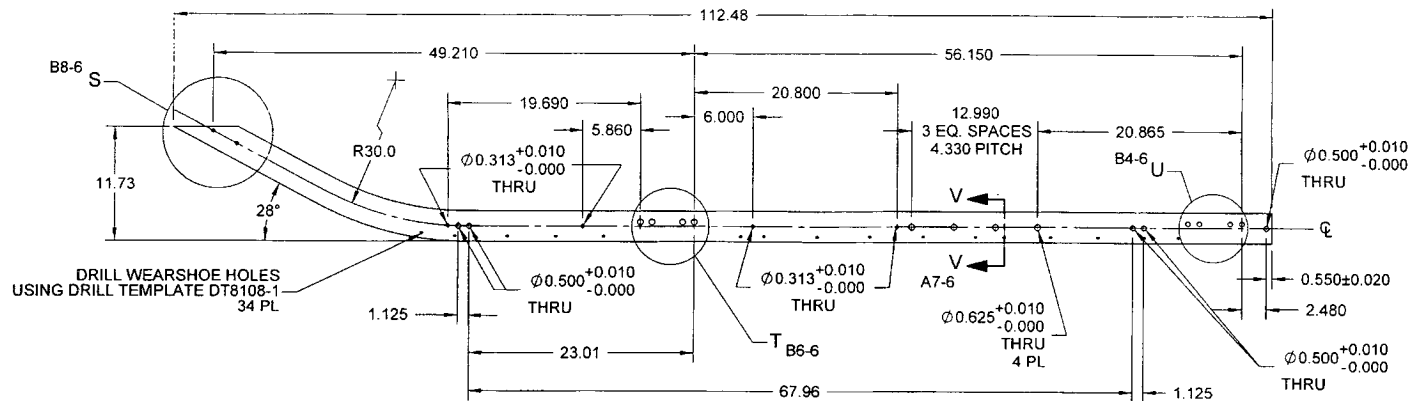
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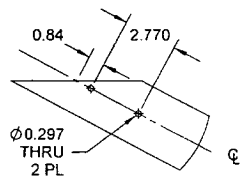
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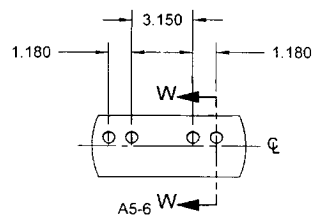
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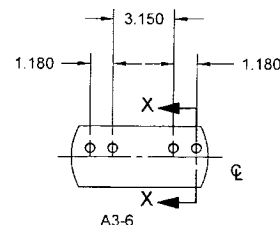
D2750-3 LH SKIDTUBE



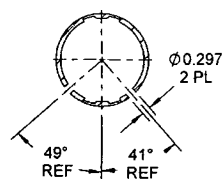
DETAIL S
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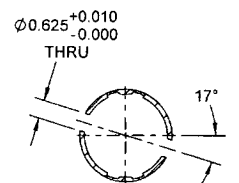
DETAIL T
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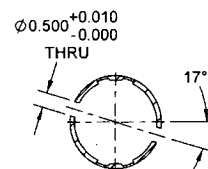
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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Dart Aerospace Ltd

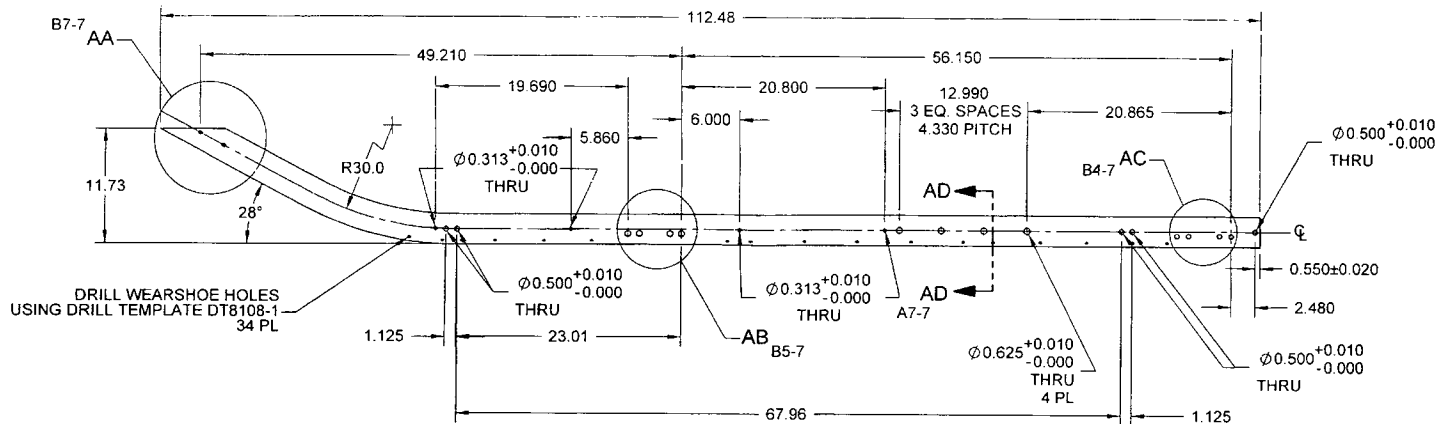
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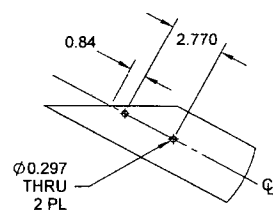
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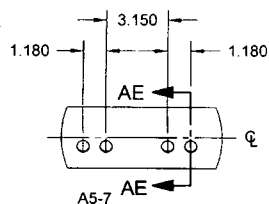
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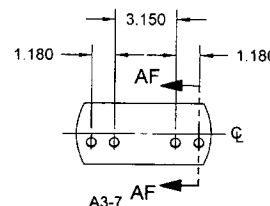
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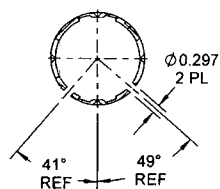
DETAIL AA
SCALE 2X
D7-7



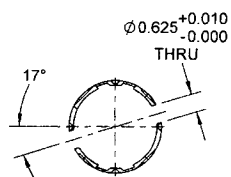
DETAIL AB
SCALE 2X
C4-7
A5-7 AE



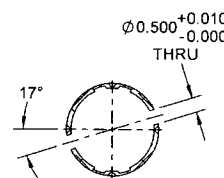
DETAIL AC
SCALE 2X
D3-7
A3-7 AF



SECTION AD-AD
SCALE 3X, 17 PL
D3-7



SECTION AE-AE
SCALE 3X, 4 PL
B6-7



SECTION AF-AF
SCALE 3X, 4 PL
B4-7

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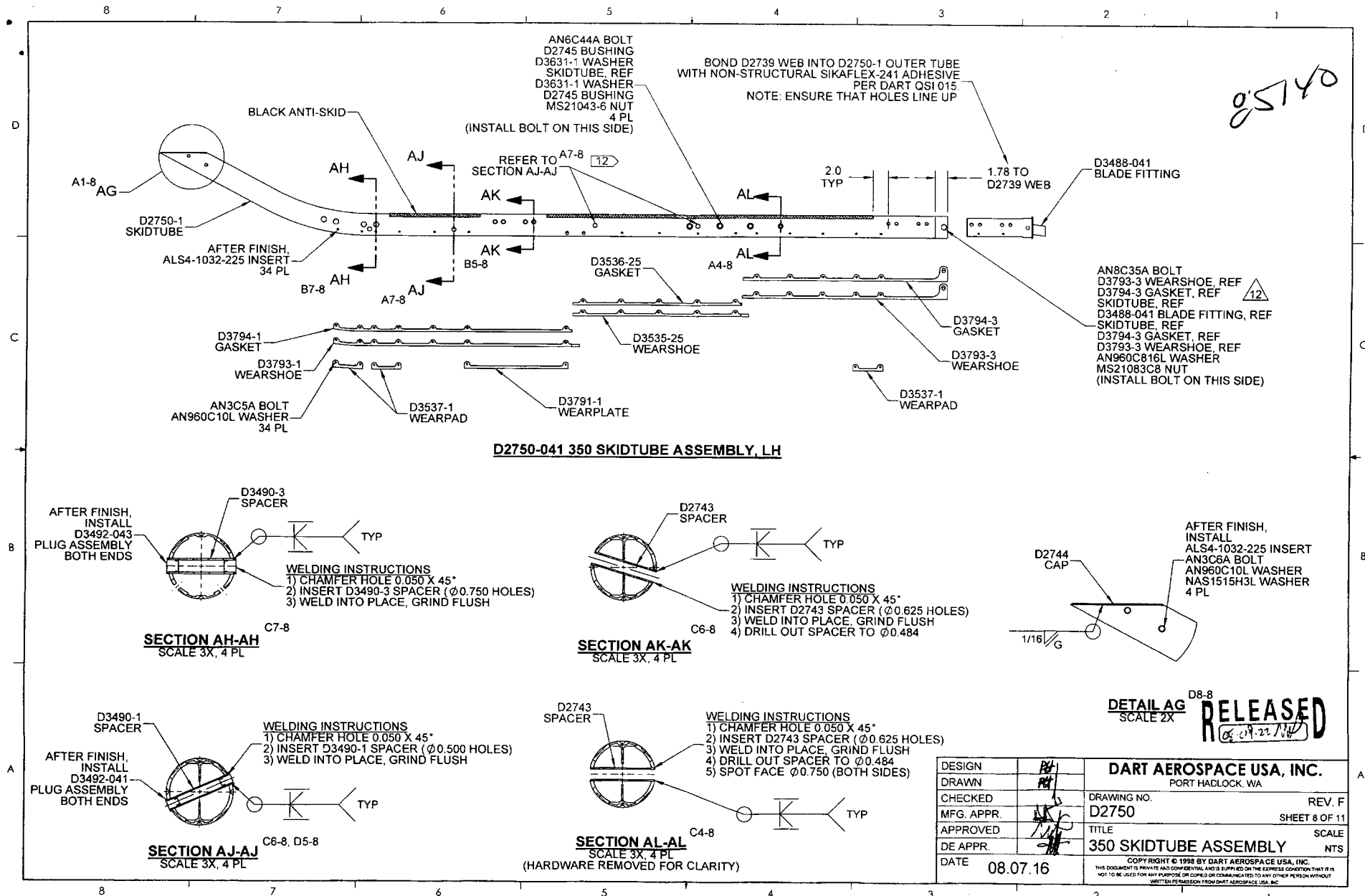
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W/O:		WORK ORDER CHANGES					
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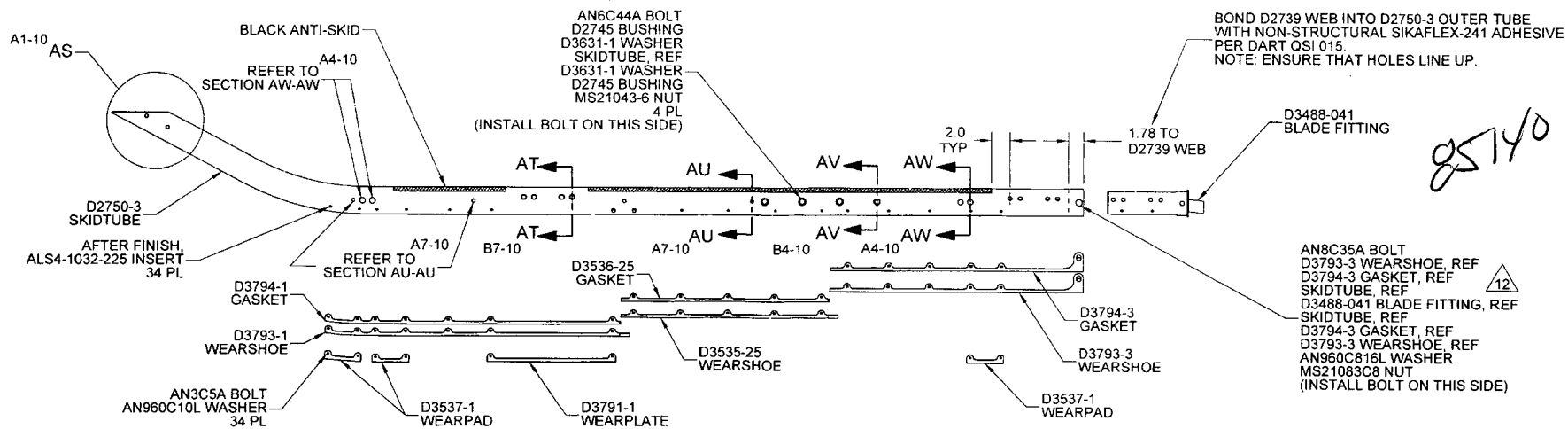
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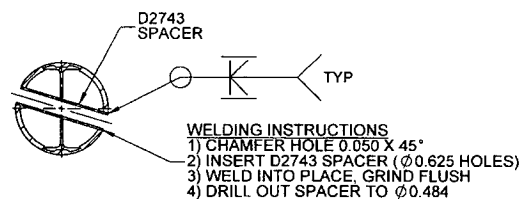
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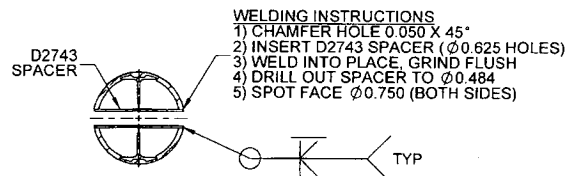
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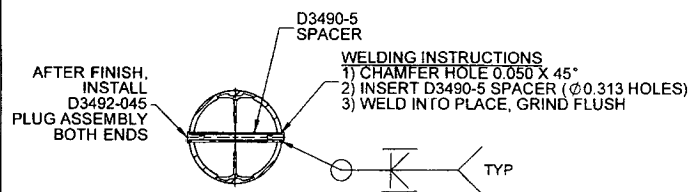
D2750-043 350 SKIDTUBE ASSEMBLY, LH



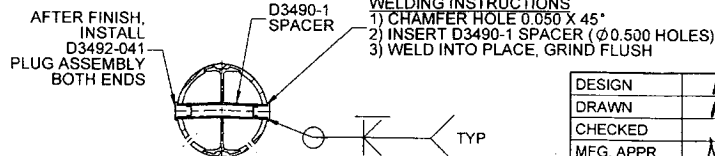
SECTION AT-AT SCALE 3X, 4 PL



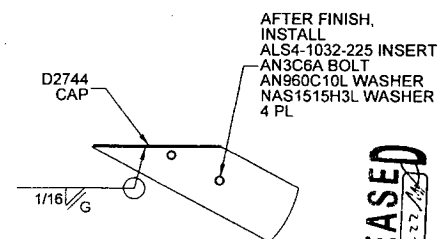
SECTION AV-AV SCALE 3X, 4 PL (HARDWARE REMOVED FOR CLARITY)



SECTION AU-AU SCALE 3X, 4 PL



SECTION AW-AW SCALE 3X, 4 PL



DETAIL AS SCALE 2X

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DRAWN	REL		SHEET 10 OF 11
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DE APPR.	★		
DATE	08.07.16		

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2018-08-27

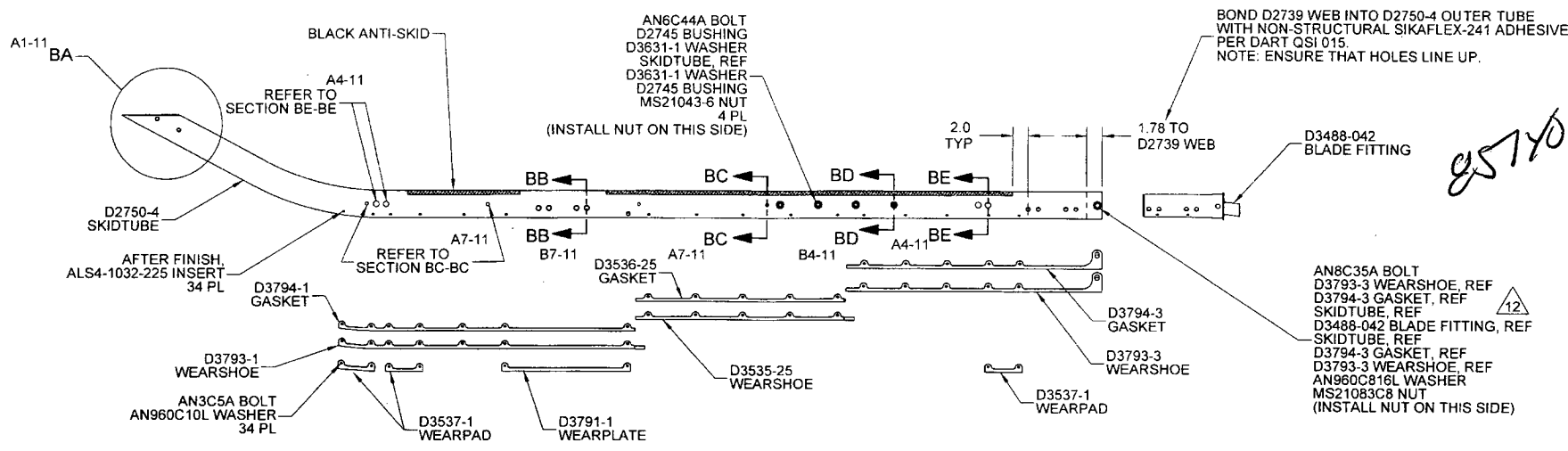
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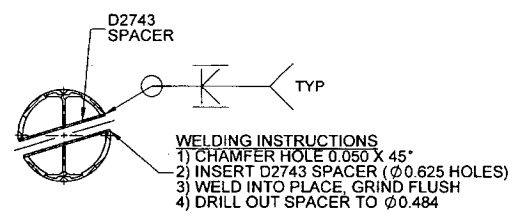
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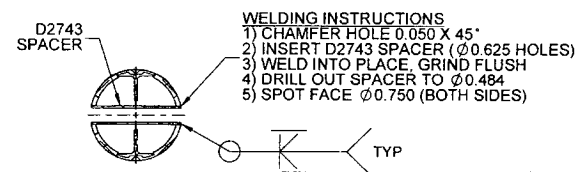
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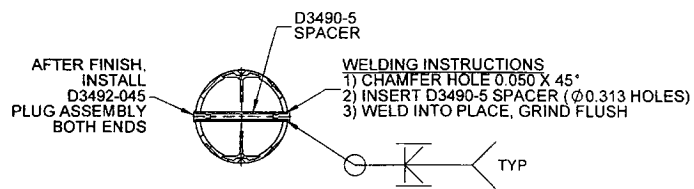
D2750-044 350 SKIDTUBE ASSEMBLY, RH



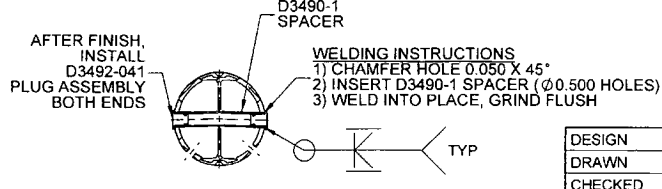
SECTION BB-BB
SCALE 3X, 4 PL



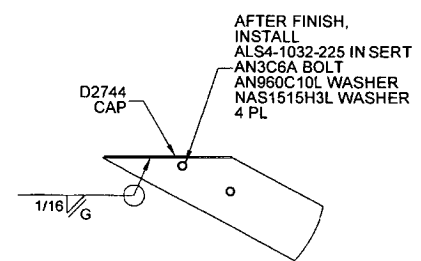
SECTION BD-BD
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



SECTION BC-BC
SCALE 3X, 4 PL



SECTION BE-BE
SCALE 3X, 4 PL



DETAIL BA
SCALE 2X

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 11 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.</small> <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

RELEASED

85710

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[☐]
Base material: Alum
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual:

pass[☒] fail[☐]

Penetration:

pass[☒] fail[☐]

UNACCEPTABLE

Cracks:

pass[☒] fail[☐]

Undercut:

pass[☒] fail[☐]

Pin holes:

pass[☒] fail[☐]

Overlap (cold lap)

pass[☒] fail[☐]

Porosity (surface):

pass[☒] fail[☐]

Coloration:

pass[☒] fail[☐]

Qualifier David Arenal

Date of Test Coupon 12.05.09

Welder Barday Elliott

Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld